7056

SHARP-CUTOFF PENTODE

7-PIN MINIATURE TYPE

For use in mobile communications equipment operating from 6-cell storage-battery systems. Useful as if or rf amplifier at frequencies up to 45 Mc.

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:
- Voltage range . . . . . 12 to 15 . . . . . ac or dc volts
- Current (Approx.) at 13.5 volts . . . . . 0.15 . . . . amp

Direct Interelectrode Capacitances:

	Without External Shield	*With External Shield*[o]	
Grid No.1 to plate	0.02 max.	0.01 max.	μμf
Grid No.1 to all other electrodes except plate . . .	6.5	6.5	μμf
Plate to all other electrodes except grid No.1	2	3	μμf

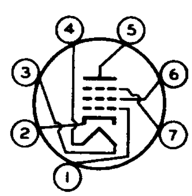
Characteristics, Class A_1 Amplifier:

Heater Voltage	13.5	volts
Plate-Supply Voltage	200	volts
Grid No.3 (Suppressor Grid) . .	*Connected to cathode at socket*	
Grid-No.2 (Screen-Grid) Supply Voltage . .	150	volts
Cathode Resistor	180	ohms
Plate Resistance (Approx.)	0.6	megohm
Transconductance	6200	μmhos
Plate Current.	9.5	ma
Grid-No.2 Current.	2.8	ma
Grid-No.1 (Control-Grid) Voltage (Approx.) for plate μa = 100	-7	volts

Mechanical:

Operating Position . . . . Any
Maximum Overall Length . . . . 2-1/8"
Maximum Seated Length. . . . . 1-7/8"
Length, Base Seat to Bulb Top (Excluding tip) . . 1-1/2" ± 3/32"
Diameter . . . . 0.650" to 0.750"
Dimensional Outline. . . . . *See General Section*
Bulb T5-1/2
Base . . . . . . Small-Button Miniature 7-Pin (JETEC No.E7-1)
Basing Designation for BOTTOM VIEW 7CM

Pin 1 - Grid No.1
Pin 2 - Cathode
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Plate



Pin 6 - Grid No.2
Pin 7 - Grid No.3, Internal Shield

[o] With external shield JETEC No.316 connected to cathode.

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AMPLIFIER — Class A_1

Maximum Ratings, *Absolute Values:*

PLATE VOLTAGE	330 max.	volts
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE	330 max.	volts
GRID-No.2 VOLTAGE	*See Grid-No.2 Input Rating Chart at front of Receiving Tube Section*	
GRID-No.2 INPUT:		
For grid-No.2 voltages up to 165 volts	0.5 max.	watt
For grid-No.2 voltages between 165 volts and 330 volts	*See Grid-No.2 Input Rating Chart at front of Receiving Tube Section*	
PLATE DISSIPATION	2 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	120 max.	volts
Heater positive with respect to cathode	120 max.	volts

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	*Min.*	*Max.*	
Heater Current	1	0.138	0.164	amp
Transconductance	1,2	5000	7400	µmhos
Plate Current	1,3	6.5	12.5	ma
Grid-No.2 Current	1,3	1.6	4	ma
Reverse Grid-No.1 Current	1,4	–	-1	µa
Heater-Cathode Leakage Current:				
Heater negative with respect to cathode	1,5	–	20	µa
Heater positive with respect to cathode	1,5	–	20	µa
Leakage Resistance:				
Between grid-No.1 and all other electrodes tied together	1,6	50	–	megohms
Between plate and all other electrodes tied together	1,7	50	–	megohms

Note 1: With ac or dc heater volts = 13.5.

Note 2: With dc plate-supply volts = 200, grid-No.2 supply volts = 150, grid No.3 connected to cathode at socket, cathode resistor (ohms) = 180, and cathode-bypass capacitor (µf) = 1000.

Note 3: With dc plate-supply volts = 200, grid-No.2 supply volts = 150, grid No.3 connected to cathode at socket, and cathode resistor (ohms) = 180.

Note 4: With dc plate volts = 200, grid-No.2 volts = 150, grid No.3 connected to cathode at socket, and grid-No.1 volts = -1.5.

Note 5: With 100 volts dc between heater and cathode.

Note 6: With grid-No.1 100 volts negative with respect to all other electrodes tied together.

Note 7: With plate 300 volts negative with respect to all other electrodes tied together.

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SPECIAL TESTS & PERFORMANCE DATA

Heater-Cycling Life Performance:

This test is performed on a sample lot of tubes from each production run. A minimum of 2000 cycles of intermittent operation is applied under the following conditions: heater volts = 17 cycled one minute on and four minutes off, heater 135 volts negative with respect to cathode, and all other elements connected to ground. At the end of this test, tubes are checked for heater-cathode shorts and open circuits.

Low-Frequency Vibration Performance:

This test is performed on a sample lot of tubes from each production run under the following conditions: heater volts = 13.5, plate-supply volts = 200, grid No.3 connected to cathode, grid-No.2 volts = 150, grid-No.1 volts = -2, plate load resistor (ohms) = 2000, and vibrational acceleration of 2.5 g at 25 cps. In this test, the rms output voltage must not exceed 250 millivolts.

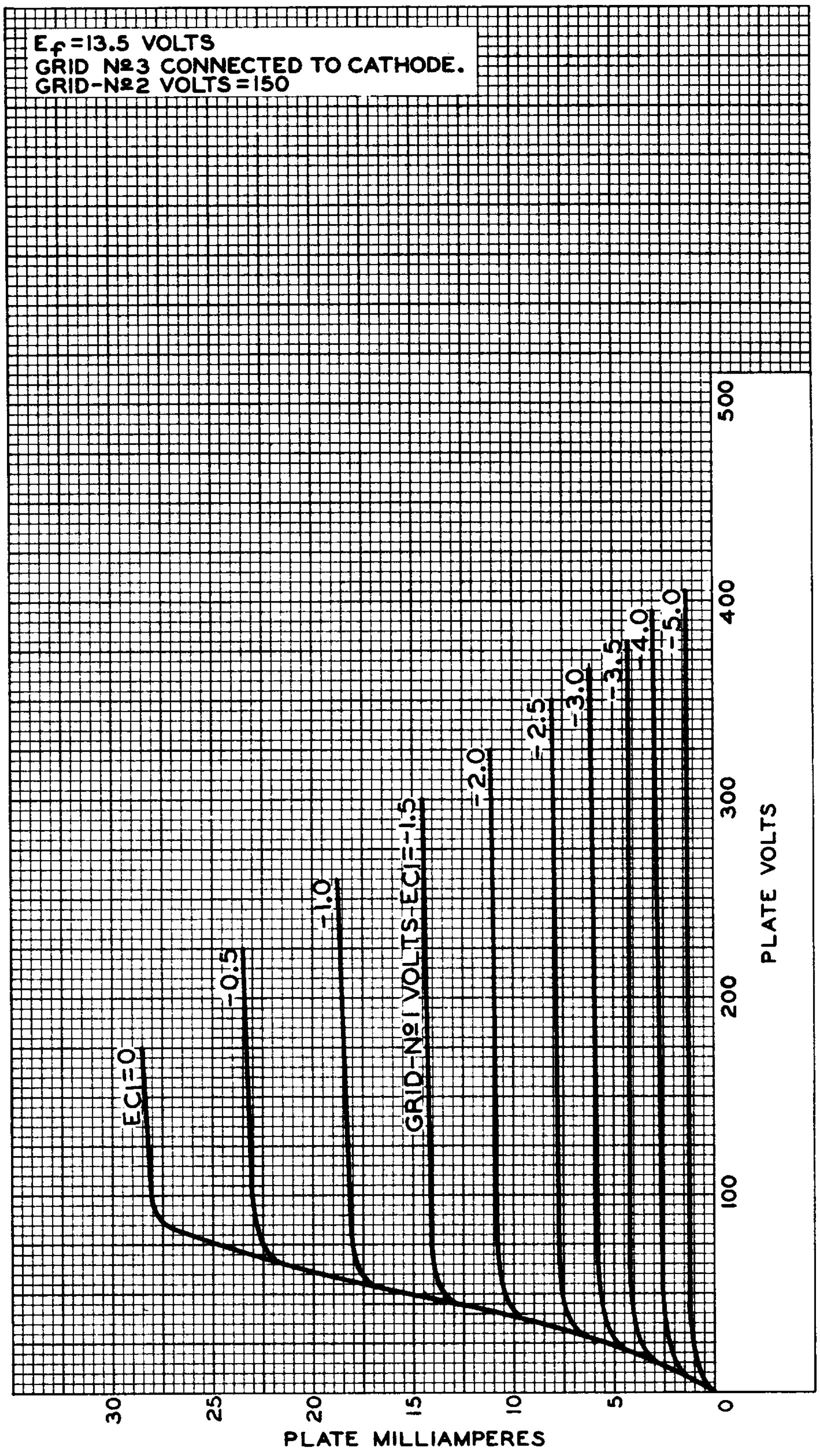
500-Hour Intermittent Life Performance:

This test is made on a sample lot of tubes from each production run to insure high quality of the individual tube and to guard against epidemic failures. Life testing is conducted under the following conditions: heater volts = 15 and maximum-rated plate dissipation and grid-No.2 input.

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AVERAGE PLATE CHARACTERISTICS



ELECTRON TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-9791

RCA

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AVERAGE CHARACTERISTICS

